

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (currently amended): A method of operating a  
2 system to process image data, the method comprising:  
3 encoding said image data to generate first  
4 encoded image data;  
5 decoding said first encoded image data to  
6 generate first decoded image data;  
7 analyzing the content of the first decoded image  
8 data to generate a first set of indexing information; and  
9 storing the first encoded image data with the  
10 generated first set of indexing information on a digital  
11 storage medium;  
12 retrieving the stored first encoded image data  
13 from the digital data storage device;  
14 decoding said first encoded image data for a  
15 second time to generate a second set of decoded image data;  
16 analyzing the content of the second set of  
17 decoded image data to generate a second set of indexing  
18 information; and  
19 storing the second set of indexing information on  
20 the digital storage media with the first encoded image data  
21 and the previously generated first set of indexing  
22 information.

1 Claim 2 (canceled):

1 Claim 3 (currently amended): The method of claim 2,  
2 further comprising:  
3 retrieving the stored first encoded image data  
4 for a second time;

5            decoding said first encoded image data for a  
6    third time to generate decoded image data;  
7            analyzing the content of the first decoded image  
8    data to generate a third set of indexing information; and  
9            storing the third set of indexing information  
10   with the first encoded image data, and the first and second  
11   sets of indexing information on the digital storage media.

1    Claim 4 (original):    The method of claim 1, further  
2    comprising:

3            receiving image data information relating to said  
4    image data prior to performing said encoding step; and  
5            storing, on the digital storage media, the  
6    received image data information with the first encoded  
7    image data and the generated indexing information.

1    Claim 5 (original):    The method of claim 4, wherein the  
2    received image data information, first encoded image data,  
3    and the generated indexing information are stored together  
4    in a first file on the digital storage media.

1    Claim 6 (original):    The method of claim 5, wherein the  
2    digital storage media further includes:

3            a second file which includes second encoded image  
4    data, second generated indexing information and second  
5    received image data; and  
6            a file directory, the file directory including:  
7            a copy of said generated indexing  
8            information included in the first file; and  
9            a copy of the second generated indexing  
10   information included in the second file.

1 Claims 7-8 (canceled):

1 Claim 9 (currently amended): ~~The method of claim 8,~~  
2 ~~further comprising:~~ A data processing method, the method  
3 comprising:  
4 receiving a first set of encoded data;  
5 decoding the first set of encoded data to  
6 generate first decoded data;  
7 analyzing the content of the first decoded data  
8 to generate first indexing information; and  
9 storing the first set of encoded data with the  
10 first indexing information in a first file on a digital  
11 storage medium;  
12 receiving a second set of encoded data;  
13 decoding the second set of encoded data to  
14 generate second decoded data;  
15 analyzing the content of the second decoded data  
16 to generate second indexing information;  
17 storing the second set of encoded data with the  
18 second indexing information in a second file on the digital  
19 storage medium; and  
20 storing in a directory file on the digital  
21 storage medium a copy of the first indexing information and  
22 a copy of the second indexing information.

1 Claim 10 (original): The method of claim 9, further  
2 comprising the step of:  
3 retrieving the first set of encoded data from the  
4 digital storage medium;  
5 decoding the first set of encoded data for a  
6 second time to generate third decoded data;

7           analyzing the content of the third decoded data  
8   to generate a third set of indexing information; and  
9           storing the third set of indexing information in  
10   a file on the digital storage medium with the first set of  
11   encoded data and the first indexing information.

1   Claim 11 (original): The method of claim 10, further  
2   comprising the step of:

3           adding a copy of the third set of indexing  
4   information to the directory file on the digital storage  
5   medium.

1   Claim 12 (original): The method of claim 11, further  
2   comprising:

3           retrieving the first set of encoded data from the  
4   digital storage medium for a second time;  
5           decoding the first set of encoded data for a  
6   third time to generate fourth decoded data;  
7           analyzing the content of the fourth decoded data  
8   to generate a fourth set of indexing information; and  
9           storing the fourth set of indexing information in  
10   a file on the digital storage medium with the first set of  
11   encoded data, the first indexing information, and the third  
12   set of indexing information.

1   Claim 13 (original): The method of claim 12, further  
2   comprising:

3           adding a copy of the fourth set of indexing  
4   information to the directory file on the digital storage  
5   medium.

1 Claim 14 (original): The method of claim 10, wherein the  
2 step of analyzing the content of the third decoded data  
3 includes:

4 analyzing the third decoded data for at least  
5 some information which is different than the information  
6 for which the first decoded data was analyzed.

1 Claim 15 (original): The method of claim 12,  
2 wherein the step of analyzing the content of the  
3 third decoded data includes:

4 analyzing the third decoded data for at  
5 least some information which is different than  
6 the information for which the first decoded data  
7 was analyzed; and

8 wherein the step of analyzing the content of the  
9 fourth decoded data includes:

10 analyzing the fourth decoded data for at  
11 least some information which is different than  
12 the information for which the first and third  
13 decoded data was analyzed.

1 Claim 16 (original): The method of claim 15, wherein the  
2 first set of encoded data includes at least one of encoded  
3 audio data and encoded video data.

1 Claim 17 (original): The method of claim 9, further  
2 comprising the step of:

3 receiving search information from a system user;  
4 accessing the directory file to identify stored  
5 encoded data corresponding to the received search  
6 information; and

7           retrieving from the digital storage medium  
8 encoded data identified as corresponding to the received  
9 search information.

1 Claim 18 (original): The method of claim 17, further  
2 comprising the step of:  
3           converting the retrieved encoded data from a  
4 first encoding format to a second encoding format thereby  
5 generating data encoded according to the second encoding  
6 format, the second encoding format being different from the  
7 first encoding format; and  
8           supplying the data encoded according to the  
9 second encoding format to a data distribution system.

1 Claim 19 (original): The method of claim 18, further  
2 comprising the step of:  
3           converting the retrieved encoded data from the  
4 first encoding format to a third encoding format thereby  
5 generating data encoded according to the third encoding  
6 format, the third encoding format being different from the  
7 first and second encoding formats; and  
8           supplying the data encoded according to the third  
9 encoding format to the data distribution system.

1 Claim 20 (canceled):

1 Claim 21 (currently amended): ~~The apparatus of claim 20,~~  
2 ~~further comprising:~~  
3 An apparatus for indexing encoded data including at least  
4 one of encoded audio data and encoded image data, the  
5 apparatus comprising:

6           a decoder module for decoding the encoded data to  
7   generate first decoded data;  
8           an indexing module for performing content  
9   analysis on the decoded data to generate information  
10   content indexing information;  
11           a storage device for storing the generated  
12   information content indexing information in a file with the  
13   encoded data;  
14           a retrieval module for retrieving from the  
15   storage device the encoded data included in the first file  
16   and for supplying the retrieved encoded data to the decoder  
17   module;  
18           wherein the indexing module indexes decoded data  
19   generated by decoding the retrieved encoded data to produce  
20   second information content information, the second  
21   information content indexing information including  
22   information on different features than the previously  
23   generated information content indexing information; and  
24           means for appending the second information  
25   content indexing information to the file including the  
26   retrieved encoded data.

1   Claim 22 (original): The apparatus of claim 21, further  
2   comprising:

3           means for storing a copy of the indexing  
4   information included in said file with the encoded data in  
5   a file directory stored in the same storage device as the  
6   file including the encoded data.

1   Claim 23 (original): The apparatus of claim 22, wherein  
2   the information content indexing information identifies

3 physical objects included in images represented by said  
4 encoded data.

1 Claim 24 (original): The apparatus of claim 23, wherein  
2 the information content indexing information identifies  
3 words included in songs stored using said encoded data.

1 Claim 25-33 (canceled):

1 Claim 34 (original): A method of processing an encoded  
2 data file, the method comprising the step of:  
3           searching the encoded data file for content  
4 information which can be obtained by examining encoded data  
5 included in said file without fully decoding said encoded  
6 data;  
7           retrieving from the data file encoded data  
8 satisfying a set of search criteria; and  
9           fully decoding the retrieved encoded data.

1 Claim 35 (original): The method of claim 34, wherein the  
2 step of searching the encoded data file includes the step  
3 of:  
4           performing a variable length decoding operation  
5 to produce data including DCT coefficients;  
6           examining the DCT coefficients to determine if  
7 the search criteria are satisfied.

1 Claim 36 (original): The method of claim 35, wherein the  
2 step of retrieving from the data file encoded data  
3 includes:  
4           retrieving one but not all of a plurality of  
5 encoded data streams included in said encoded data file.



1 Claim 37 (original): The method of claim 36, wherein the  
2 step of retrieving from the data file encoded data  
3 includes:  
4           retrieving some but not all of the encoded data  
5 included in an encoded data stream.

1 Claim 38 (original): The method of claim 34, further  
2 comprising the step of:  
3           performing an indexing operation on the decoded  
4 data produced by decoding the retrieved encoded data to  
5 thereby generate indexing information; and  
6           storing the indexing information in the data file  
7 from which the encoded data was retrieved.

1 Claim 39 (original): A method of indexing encoded  
2 information, the method comprising the steps of:  
3           retrieving encoded information from a data file;  
4           performing a partial decoding operation on the  
5 encoded information to generate partially decoded data; and  
6           performing an indexing operation on said  
7 partially decoded data to generate indexing information.

1 Claim 40 (original): The method of claim 39, further  
2 comprising the step of:  
3           storing the generated indexing information in the data  
4 file from which the encoded information was retrieved.

1 Claim 41 (original): The method of claim 39, wherein the  
2 step of performing a partial decoding operation includes  
3 the step of:

4 performing a decoding operation to generate DCT  
 5 coefficients from the encoded data; and  
 6 wherein the step of performing an indexing  
 7 operation includes examining the DCT coefficients to assess  
 8 the information content of the retrieved encoded data.

1 Claim 42 (original): The method of claim 40, wherein the  
 2 step of storing the generated indexing information includes  
 3 appending the indexing information to said data file.

1 Claim 43 (original): The method of claim 39, wherein the  
 2 step of retrieving encoded information includes:  
 3 retrieving one but not all of a plurality of  
 4 encoded data streams included in said encoded data file.

1 Claim 44 (original): The method of claim 39, wherein the  
 2 step of retrieving from the data file encoded data  
 3 includes:  
 4 retrieving some but not all of the encoded data  
 5 included in an encoded data stream.